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BULLETIN
OF THE
TORREY BOTANICAL CLUB

DECEMBER, 1910

New species of Uredineae—VII

JOSEPH CHARLES ARTHUR

Since the publication of the last number in this series* of articles many species of rusts have come to light, which appear to be undescribed. Some of these forms are the discovery of collectors in the field, and have been sent to this laboratory for study; other forms have been brought to light in the course of the monographic study of the order in preparation for the North American Flora; and a few forms have been known for many years and have passed under collective names or been placed in the wrong genera owing to imperfect knowledge of the spore-forms. The writer is appreciative of the kindness of his many correspondents who have sent material for study, and who, in most instances, have placed no restrictions upon the use of it, a courtesy to the general cause of scientific advancement.

In the last preceding number of the series a description was published of a rust on an undetermined species of host, locally known as "Washington Vine." It was given the name *Uredo inquirenda*, with the hope that the matter would attract the attention of some one who could suggest the probable identity of the host. This hope has been realized. Mr. Elam Bartholomew writes that the common Matrimony Vine (*Lycium vulgare* Dunal) is known in some localities as "Washington Vine." From this suggestion it has been easy to verify the host of *Uredo inquirenda* as *Lycium vulgare*, and to show that the new name is a synonym of *Puccinia globosipes* Peck.

*New species of Uredineae. Bull. Torrey Club 28: 661-666. 1901; 29: 227-231. 1902; 31: 1-8. 1904; 33: 27-34. 1906; 33: 513-522. 1906; 34: 583-592. 1907.
[The BULLETIN for November, 1910 (37: 523-568. pl. 34, 35) was issued 30 N 1910.]

***Puccinia Deschampsiae* sp. nov.**

O and I. Pycnia and aecia unknown.

II. Uredinia epiphyllous, scattered, oblong or linear, 0.5–1 mm. long, rather tardily naked, yellowish, ruptured epidermis noticeable; urediniospores obovoid or ellipsoid, 19–21 by 26–29 μ ; wall pale yellow, moderately thin, about 1.5 μ , finely verrucose-echinulate, pores 4, equatorial; paraphyses very numerous, clavate or clavate-capitate, 12–15 by 48–90 μ , wall light yellow or nearly colorless.

III. Telia epiphyllous, scattered, oblong or linear, about 0.5 mm. long or less, tardily naked, brownish; teliospores oblong or oblong-ellipsoid, 18–23 by 32–48 μ , rounded or obtuse above, rounded or somewhat narrowed below, slightly constricted at septum; wall cinnamon-brown, rather thin, 1–2 μ , thicker above, 3–5 μ , smooth; pedicel short.

On *Deschampsia caespitosa* (L.) Beauv., Longs Peak, Colorado, near the Longs Peak Inn, 2700 meters altitude, August 6, 1907, F. E. Clements (Clements, Crypt. Form. Colo. 558). The presence of paraphyses with the urediniospores, and the four equatorial pores, are characters that make this readily distinguishable from the other numerous grass rusts of the Rocky Mountains.

***Puccinia Parthenii* (Speg.) comb. nov.**

Uredo Parthenii Speg. An. Mus. Nac. Buenos Aires 6: 239. 1899.

II. Uredinia amphigenous and caulicolous, or only epiphyllous, usually without causing discoloration or hypertrophy, rounded, 0.3–0.7 mm. across, soon naked, cinnamon-brown, moderately pulverulent, ruptured epidermis noticeable; urediniospores ellipsoid or globoid, sometimes triquetrous and often irregular, 19–26 by 24–32 μ ; wall yellowish brown, moderately thick, 2–2.5 μ , strongly echinulate, pores 2, equatorial or sometimes slightly depressed below the equator, with occasionally a third pore at or near the apex.

III. Telia amphigenous, irregular and often confluent, resembling the uredinia but darker in color, soon naked, seemingly pulverulent, chocolate-brown, ruptured epidermis noticeable; teliospores ellipsoid, often irregular and elongated, 29–32 by 40–45 μ , smooth, rounded or obtuse at both ends, slightly or not constricted at septum; wall dark chocolate-brown, thick, 4–6 μ , thicker at apex, 6–9 μ , by addition of a paler cap or umbo, pore in lower cell conspicuous, near the septum; pedicel colorless, broad but collapsible, once to twice the length of spore.

On *Parthenium Hysterophorus* L. (type host), San Andres Chalco, State of Mexico, Mex., October 8, 1898, *E. W. D. Holway* 3228; *P. incanum* H.B.K., Kent, Texas, May 7, 1902, *S. M. Tracy & F. S. Earle* 324a; *P. argentatum* A. Gray, Mazapil, State of Zacatecas, Mex., March 27, 1908; Cedros, State of Zacatecas, Mex., May 22, 1908, *F. E. Lloyd*. Only the specimens of the last two collections show teliospores. Professor Lloyd was for some time engaged in scientific and economic study of the guayule (*Parthenium argentatum*), and took considerable pains to observe the behavior of the rust. He found that the rust does not affect the newer leaves of the season, but appears chiefly on the oldest leaves at the base of the season's growth and consists mostly of uredinia. The telia, which are rarely abundant, are found in the spring on the leaves remaining over from the preceding season. Attempts by both Professor Lloyd and the writer to germinate the teliospores were in vain. The rust is propagated chiefly through the urediniospores. Whether it possesses aecia or not is uncertain.

***Puccinia Glaucis* sp. nov.**

O. Pycnia not seen, probably obsolete.

III. Telia amphigenous, solitary or sometimes confluent in small groups, 1.5–2 mm. across, roundish, 0.5–1 mm. in diameter, soon naked, pulvinate, compact, dark brown, becoming gray by germination of the spores, ruptured epidermis inconspicuous; teliospores lanceolate-oblong, 13–16 by 43–50 μ , obtuse at both ends, slightly constricted at the septum; wall smooth, golden brown, rather thin, 1–1.5 μ , obtusely thickened at apex, 6–9 μ ; pedicel light yellow, slender, one half to once length of spore.

On *Glaux maritima* L., Halifax, Nova Scotia, August 16, 1909, *John Dearnness*. A well-marked leptiform on a host which heretofore has been reported only for a heteroecious *Aecidium*. It was found in considerable abundance.

***Puccinia Nabali* sp. nov.**

O. Pycnia not seen, probably obsolete.

III. Telia chiefly hypophyllous, gregarious, in orbicular groups on discolored spots 2–5 mm. in diameter, quite soon naked, roundish, small, 0.2–0.5 mm. across, often crowded and confluent, pulvinate, dark chocolate-brown, ruptured epidermis conspicuous; teliospores clavate or spatulate, 16–19 by 39–45 μ , rounded or

truncate above, somewhat narrowed below, slightly constricted at the septum; wall chestnut-brown, considerably paler below, rather thin, $1.5-2\mu$, much thicker above, $7-9\mu$, smooth; pedicel somewhat tinted, firm, usually tapering downward, one half length of spore or shorter.

On *Nabalus racemosus* (Michx.) Hook., Seven Islands, Saguenay Co., Quebec, August 6, 1907, *C. B. Robinson* 785. A well-marked species, probably a leptiform, although the sori become uncovered slowly and the spores germinate tardily.

***Uromyces Glyceriae* sp. nov.**

O and I. Pycnia and aecia unknown.

II. Uredinia amphigenous, intercostal, scattered, oval or lens-shaped, small, 0.2–0.4 mm. long, soon naked, pulverulent, brownish yellow, ruptured epidermis usually inconspicuous; urediniospores broadly ellipsoid or globoid, 16–21 by 18–26 μ ; wall pale golden yellow, moderately thick, 1.5–2.5 μ , finely and evenly verrucose-echinulate; pores 6–8, scattered, rather distinct.

III. Telia amphigenous, intercostal, scattered, oval or lens-shaped, small, 0.2–0.4 mm. long, tardily naked, finally pulvinate, dark chestnut-brown, longitudinally ruptured epidermis usually conspicuous; teliospores irregularly obovoid or oblong-obovate, 14–19 by 21–34 μ , rounded, truncate or obtuse above, usually narrowed below; wall smooth, cinnamon-brown, often paler below, rather thin, 1–1.5 μ , apex much thicker, 3–7 μ ; pedicel slender, tinted, about length of spore.

On *Glyceria septentrionalis* Hitchc. (usually listed as *G. fluitans*), Racine, Wis., Oct. 19, 1890, *J. J. Davis*; Racine, Wis., April, 1891, *J. J. Davis* (type) (*Ellis & Everh., N. Amer. Fungi* 2718); Western Union Junction, Wis., Oct. 24, 1897, *J. J. Davis*; Oregon, Ill., Sept. 11, 1889, *M. B. Waite*; *G. acutiflora* Torr., Newport, R. I., July, 1878, *W. G. Farlow*. This species is very similar in both gross and minute characters to *Uromyces Poae* Rabenh., for which it has been mistaken, but differs especially in having twice as many pores in the urediniospores. The true *Uromyces Poae* has been collected but once in America, so far as the writer knows, which was in Nova Scotia by Professor W. P. Fraser, on *Poa trivialis*.

I am indebted to Dr. Davis for fine fruiting specimens of the host, collected Oct. 1, 1910, from the type station near Racine, with which the identity of the host has been re-established. Dr.

Davis writes that the rust has long since disappeared from the region. The other station at Western Union Junction, now known as Corliss, has become a plowed field, and of course the rust has been annihilated.

***Uromyces Spegazzinii* (De-Toni) comb. nov.**

Uredo Spegazzinii De-Toni, in Saccardo, Syll. Fung. 7: 845. 1888.

O and I. Pycnia and aecia unknown.

II. Uredinia amphigenous and caulicolous, scattered, or somewhat gregarious, sometimes circinate, roundish or oval, 0.5–0.8 mm. across, soon naked, cinnamon-brown, pulverulent, ruptured epidermis conspicuous; urediniospores oval or broadly elliptical, 20–26 by 26–35 μ ; wall rather thick, 1.5–2.5 μ , dark cinnamon-brown or chestnut-brown, finely echinulate; pores 2, equatorial and opposite.

III. Telia amphigenous, scattered, roundish or oval, 0.6–1 mm. across, soon naked, pulvinate, chocolate-brown, ruptured epidermis conspicuous; teliospores ellipsoid or obovoid, 21–24 by 29–35 μ , usually rounded above and below; wall chestnut-brown, rather thick, 1.5–2 μ , thicker above, 8–10 μ , with a slightly paler umbo; pedicel nearly or quite colorless, rather thick, about length of spore.

On *Commelina virginica* L., Austin, Texas, Oct. 16, 1908, *F. D. Heald* & *F. A. Wolf* 232, with III; Fisherman's Key, Fla., May 15, 1901, *S. M. Tracy* 7239; *C. elegans* H.B.K. St. Croix, W. I., Jan. 7, 1896, *A. E. Ricksecker* 5; *C. erecta* L., Key West, Fla., March 27, 1906, *A. S. Hitchcock*; *C. angustifolia* Michx., Jensen, Fla., Nov. 8, 1898, *P. H. Rolfs* 48; Miami, Fla., March 25, 1903, *E. W. D. Holway*, Dec. 29, 1905, *Ernst A. Bessey* 32. Common throughout the warmer parts of North and South America on *Tradescantia* and *Commelina*, usually in the uredinial stage.

This species, like many other tropical and semitropical forms reproduces itself chiefly by means of the urediniospores, the teliospores being rarely found. A collection from Texas, made by Messrs. Heald and Wolf in 1908, enables us for the first time to prepare a description of the telial stage.

The type collection was made in Argentina by C. Spegazzini on *Commelina sulcata* and named *Uredo Commelinae*, a name that was given by Kalchbrenner two years later to a quite distinct South African species, subsequently called *Uromyces Commelinae*

Cooke. This led De-Toni to rename the South American rust. Still later names for the latter are *Uredo ochracea* Dietel, founded on a Brazilian collection, and *Uredo commelinacea* Ellis & Kelsey, founded on a West Indian collection.

There is no direct evidence to show whether the species possesses aecia or not; but as nearly all rusts on monocotyledonous hosts do have aecia so far as their life cycles are known, it is a fairly safe inference that aecia will eventually be found for this species.

***Uromyces Coluteae* sp. nov.**

O and I. Pycnia and aecia unknown.

II. Uredinia hypophyllous, scattered, roundish, small, 0.2–0.3 mm. in diameter, soon naked, somewhat pulverulent, pale cinnamon-brown, ruptured epidermis conspicuous; urediniospores broadly ellipsoid or globoid, 18–24 by 21–27 μ ; wall golden brown, moderately thick, 1.5–2 μ , finely and rather closely echinulate; pores 3, rarely 4, equatorial.

III. Telia hypophyllous, scattered, roundish, small, 0.2–0.3 mm. in diameter, soon naked, chestnut-brown, ruptured epidermis noticeable; teliospores broadly ellipsoid or obovoid, 15–19 by 19–23 μ ; wall cinnamon-brown, rather thick, 1.5–2 μ , with a small hyaline papilla over the germ-pore at apex, moderately and evenly verrucose; pedicel short, hyaline, deciduous. (FIGURE 1, A.)

On *Colutea arborescens* L., Manhattan, Kansas, August, 1887, W. A. Kellerman & W. T. Swingle 1650; Sept. 1, 1890, W. T. Allen 1205. This Old World species was found on plants in the nursery and grounds of the State Agricultural College of Kansas. It has heretofore been listed under the name *Uromyces Genistae-tinctoriae*, a combination first used by Winter in Die Pilze, 1881. Winter united a number of forms under the name, because, as he says, he was not in a position to decide upon diagnostic characters. The species differs from the genuine *U. Genistae-tinctoriae*, which is common in Europe on various species of *Genista*, *Cytisus*, and *Laburnum*, by having three equatorial pores in the urediniospores instead of three to six scattered pores, and by the evenly verrucose teliospores instead of those more or less striate (see figure). Spores of intermediate character are not rare. The type collection selected for the new species is the one issued as no. 403 in Sydow's Uredineen, collected at Meran, Austria, Sept. 13, 1890, by Dr. P. Magnus.

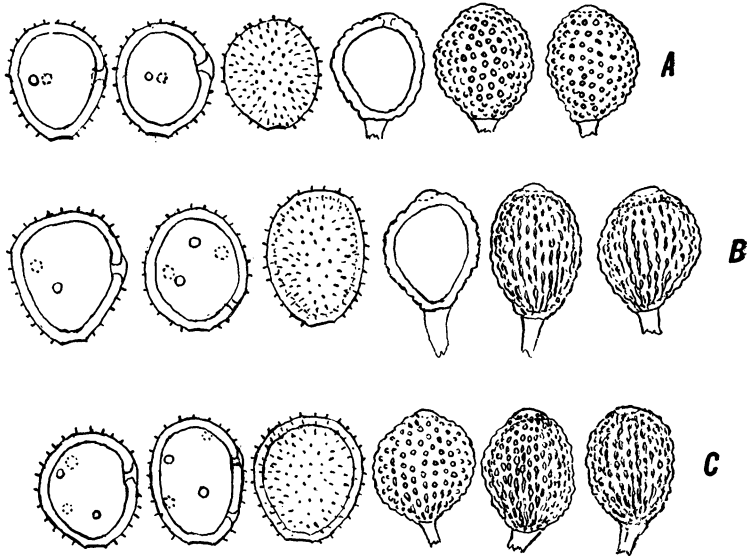


FIGURE 1. Three urediniospores on the left and three teliospores on the right in each row, partly drawn in optical section and partly in surface view: A, *Uromyces Coluteae* from type, Sydow, Ured. 403; B, *Uromyces Genistae-tinctoriae* on *Genista tinctoria* from Rabenhorst, Fungi Eur. 1480; C, *Uromyces Genistae-tinctoriae* on *Laburnum vulgare* from Kunze, Fungi Sel. Exs. 516. $\times 625$.

Uropyxis Agrimoniae sp. nov.

O. Pycnia unknown.

II. Uredinia hypophyllous; urediniospores broadly ellipsoid or obovoid, 13–15 by 18–21 μ ; wall golden yellow, rather thin, 1.5 μ , evenly echinulate-verrucose, pores 8, in two zones of 4 each, equidistant from equator.

III. Telia hypophyllous, scattered, soon naked, dark chocolate-brown, pulverulent, ruptured epidermis inconspicuous; teliospores ellipsoid, 18–21 by 25–27 μ , rounded at both ends, slightly constricted at septum; wall obscurely laminate, gelatinous layer rarely swelling slightly in water, chocolate-brown, rather thick, 1.5–2 μ , slightly thicker at apex, 3 μ , closely and evenly verrucose; pores 2 in each cell, lateral, or one of those in the upper cell in the umbo, usually indistinct; pedicel often inserted obliquely, colorless, firm, slender, terete, acuminate and roughened below, not swelling in water, 2–4 times length of spore.

On *Agrimonia mollis* (T. & G.) Britton, Sumner, Mo., Oct. 7, 1907, *E. Bartholomew* 3765. This species is an interesting addition

to the genus *Uropyxis*. The collection was made too late in the season to show characters of the sori well. The teliospores, however, were present in great abundance, but on leaves thickly covered with the bright yellow uredinia of *Pucciniastrum Agri-moniae*, among which the teliospores of the *Uropyxis* were conspicuous on account of their dark color. Owing to the slight development of the gelatinous layer, the teliospores might easily be mistaken for those of some *Puccinia*. The presence of more than one pore in each cell, however, together with correlated but less decisive characters of wall and pedicel, and especially the arrangement of the uredinial pores in zones, leaves no place for doubt that this is correctly assigned to the genus *Uropyxis*. The species should follow the second one mentioned under that genus in the North American Flora 7: 155. 1907.

***Uredo Spirostachydis* sp. nov.**

II. Uredinia caulicolous, scattered, round or roundish, 0.4–0.8 mm. across, soon naked, usually pulvinate and only moderately pulverulent, cinnamon-brown, ruptured epidermis conspicuous; urediniospores ellipsoid or oblong, 18–21 by 23–29 μ ; wall dark golden brown, closely and rather coarsely echinulate, moderately thick, 2–2.5 μ , pores 6–8, scattered.

On *Spirostachys occidentalis* S. Wats. (*Allenrolfea occidentalis* Kuntze), north of Yuma, Ariz., April 26, 1906, Marcus E. Jones 7815. The microscopic characters of the spores are in close accord with those of *Uromyces Chenopodii* (Duby) Schröt., as represented by Kunze, Fungi Selecti Exsiccati 214b, but in the absence of teliospores it is unwise to use that name or that of any other European species. A name and description are supplied for this collection to call the attention of western mycologists to the species. It will doubtless be found also to possess aecia, appearing very early in the season in such localities as have favored the formation of telia at the close of the previous season. The succulent stems of the host are well covered with the rusty-colored sori, and the telia when discovered will probably have a similar appearance, but probably a little darker.

***Uredo Beloperonis* sp. nov.**

II. Uredinia amphigenous and caulicolous, scattered, sometimes circinate, roundish or elongated, large, 0.5–2 mm. across,

early naked, somewhat pulvinate, pulverulent, chocolate-brown, ruptured epidermis conspicuous; urediniospores broadly ellipsoid or obovoid, $21-26$ by $26-31\mu$; wall cinnamon-brown, rather thick, $2-2.5\mu$, hilum usually conspicuous, evenly echinulate, pores 2, opposite and equatorial, readily seen.

On *Beloperone californica* Benth., western edge of the Colorado Desert, California, April 17, 1907, *S. B. Parish 6170*, communicated by E. W. D. Holway. This acanthaceous rust is somewhat similar to *Uredo varia* Diet. of Brazil, but differs materially in all gross and microscopic characters except size and shape of spores. It is a conspicuous form.

***Uredo Wilsoni* sp. nov.**

II. *Uredinia* hypophyllous, scattered, punctiform, $0.1-0.3$ mm. across, soon naked, pulverulent, chestnut-brown, ruptured epidermis inconspicuous; paraphyses abundant, peripheral, terete, apparently jointed, walls smooth, colored; urediniospores globoid, or broadly obovate, $21-25$ by $26-29\mu$; wall light chestnut-brown, rather thick, $2-2.5\mu$, strongly verrucose with colorless, conical warts, slightly separated from each other, pores 2, opposite and equatorial, not easily seen.

On *Anastrophia bahamensis* Urban, Hanna Hill, Long Cay, Bahama Islands, Dec. 7-17, 1905, *L. J. K. Brace 4029*. This rust was detected by Mr. Percy Wilson of the New York Botanical Garden, while studying the West Indian collections in the herbarium, and in recognition of this and other services rendered to the taxonomic work of the North American flora, both mycological and phanerogamic, I take the opportunity to express appreciation in the form of the name.

The powdery spores of the rust are entangled in the thick, cottony pubescence of the lower surface of the leaf, as they are discharged from the minute, subepidermal sori, and make fuscous spots in the white felted surface. Only one collection bore the rust. Other collections of the same host and also those of other species of the same genus showed very similar spots at first mistaken for it, which are made by a blackish and non-pulverulent pyrenomycetous fungus.

The spores of this rust are not especially notable, but the long, jointed paraphyses are highly distinctive and unusual. Its occurrence within the tribe Mutiseae of the composites, from which

this is probably the first rust recorded, and its endemic character on a shrub of one of the smaller West Indian islands, are items that make the study of the other stages in its life cycle, and of its relationship and distribution, matters of more than usual interest.

***Peridermium fructigenum* sp. nov.**

O. Pycnia episquamous, numerous, inconspicuous, subcuticular, semicolumnar or irregular-conoidal, $48-58\mu$ in diameter by about 35μ high; ostiolar filaments wanting.

I. Aecia episquamous, numerous, often crowded thickly over the whole surface of a scale, oblong, 0.3–0.5 mm. wide by 0.7–1.5 mm. long, often confluent, subepidermal, soon naked, dingy white when dry, ruptured epidermis noticeable; peridium irregularly convex, soon dropping away, peridial cells ellipsoid, loosely united, resembling the spores, but somewhat larger, rougher, and often compressed into irregular shapes; aeciospores broadly ellipsoid or obovate, rather small, 13–16 by 19–22 μ ; wall colorless, moderately thick, 2–2.5 μ , rather finely and closely verrucose.

On *Tsuga canadensis* (L.) Carr., East Granby, Conn., June 21, 1908, *Perley Spaulding* 114. The fungus gives the cones a peculiar, whitened appearance. It is remarkable that the rust should have so long escaped the attention of collectors. The elevated pycnia and evanescent peridium readily distinguish this species from *P. Peckii* Thüm., which occurs on the leaves of the same host.

In the study of the genus *Peridermium*,* made some time ago by Mr. Kern and the writer, it was pointed out that the number of American species known, having subcuticular pycnia, was considerably less than the number of telial species known requiring similar aecia. This additional species helps to lessen the discrepancy. In accordance with the chain of reasoning there employed, the new form on *Tsuga* doubtless goes to some species of *Pucciniastrum*, and judging from known distribution, it may be the aecial form of *Puc. minimum* (Schw.) Arth., having telia on *Azalea*.

***Aecidium leporinum* sp. nov.**

O. Pycnia not seen.

I. Aecia hypophyllous, gregarious in circular groups 1–3 mm. across, crowded, on substratum scarcely thickened and little discolored, 0.2–0.4 mm. high; peridium cylindrical, erect or somewhat

*Arthur & Kern, North American species of *Peridermium*. Bull. Torrey Club 33 403–438. 1906.

recurved, erose, peridial cells strongly imbricated, rhomboidal below, becoming ovate-lanceolate above when seen in radial section, outer wall nearly or quite smooth, inner wall somewhat thicker, closely and prominently verrucose with slender, elongated warts; aeciospores angularly and broadly ellipsoid or nearly globoid, 18–21 by 24–29 μ ; wall pale yellow, rather thick, 2–2.5 μ , greatly thickened above, 7–9 μ , closely and finely verrucose.

On *Macrosiphonia brachysiphon* (Torr.) A. Gray, Guayamoba Canyon, Sierra Madre Mts., Chihuahua, Mex., Sept. 27, 1903, M. E. Jones 7774. The strongly thickened apical wall of the spores readily distinguishes this form from similar forms on the Apocynaceae, and especially from those mentioned below.

***Aecidium obesum* sp. nov.**

O. Pycnia amphigenous, numerous, crowded in opposed groups, 0.3–1 mm. across, small, inconspicuous, punctiform, honey-yellow becoming brownish, flattened-globoid, 96–128 μ broad by 58–77 μ high; ostiolar filaments 30–48 μ long.

I. Aecia hypophyllous, gregarious in circular groups 2–7 mm. across, crowded on scarcely thickened but much discolored spots, exerted portion evanescent; peridial cells imbricated, easily falling apart, obovate-lanceolate in radial section, inner wall finely verrucose, outer wall somewhat thicker, strongly verrucose, aeciospores globoid or somewhat ellipsoid, large, 28–35 by 32–40 μ ; wall colorless, greatly thickened, 5–8 μ , irregular within, forming an angular or stellate cavity, closely and prominently verrucose.

On *Apocynum hypericifolium* Ait. (*A. cannabinum hypericifolium* A. Gray), Manhattan, Kanas, May 15, 1886, W. A. Kellerman (type), (Ellis, N. Amer. Fungi 1823; Vestergren, Micr. Rar. Sel. 1101); Merriam, Neb., July 11, 1899, J. M. Bates. This form has been confused with *Aecidium Apocyni* Schw., which occurs east of the Alleghany mountains from New Jersey to North Carolina. The eastern form has a firm peridium, and small aeciospores, 16–20 μ in diameter, with thin walls, 1–1.5 μ .

Through the kindness of Prof. T. J. Burrill I have been able to examine the collection recorded in Burrill's Parasitic Fungi, page 236, which was made by Mr. A. B. Seymour at Normal, Ill., June 14, 1882, and find that it consists of a single leaf of *Apocynum hypericifolium* with a single group of pycnia, but gathered too early to show even the beginning of aecia. It is impossible to decide even approximately upon the identity of the fungus.

***Aecidium libertum* sp. nov.**

O. Pycnia not seen.

I. Aecia hypophyllous, evenly distributed over the whole surface of the leaf, substratum neither thickened nor discolored; peridium short-cylindrical, 0.3–0.4 mm. in diameter, margin somewhat recurved, lacerate, peridial cells cuboidal, squarely abutted except a downwardly imbricated outer tooth, outer wall smooth, 5–7 μ , inner wall slightly thinner, 3–4 μ , and closely verrucose; aeciospores angularly globoid, 17–19 by 18–23 μ ; wall pale yellow, thin, 1 μ , closely and finely verrucose.

On *Urtica chamaedryoides* Pursh, Sapulpa, Indian Territory (now state of Oklahoma), May 1, 1895, *B. F. Bush 1269*, communicated by A. G. Johnson, who found the material in the phanerogamic herbarium of the Missouri Botanical Garden, St. Louis, Mo. This form is strikingly different from the aecia commonly found on *Urtica*, which belong to the cosmopolitan *Carex* rust, *Puccinia Caricis*, only in the distribution of the aecial sori over the host. In the structure of the aecium, and in the size, shape, and markings of the peridial cells and aeciospores, the two forms are essentially alike. Although the mycelium occupies all or most of each leaf, and most of the leaves on the plant, yet it may not be a perennial mycelium, but be diffused from an early spring infection. Most of the rusts having evenly scattered aecia, especially if the mycelium is annual, are autoecious, and there is considerable probability that in this case the associated telia will be found to follow upon the same host, and without the accompaniment of uredinia. In this connection it may be pointed out as of incidental interest that the teliospores of the leptiform, *Puccinia Urticae* Barclay, found in India, agree essentially with the teliospores of *Puccinia Caricis* (Schum.) Schröt. (*P. Urticae* Lagerh.), adding another example of the curious morphological agreement between heteroecious species with many spore-forms and autoecious species with one spore-form affecting the same host, pointed out by Dr. Tranzschel of St. Petersburg. The new *Aecidium* on *Urtica*, here described, may prove to be an extension of this same example.

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